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## BINOCULAR ASTIGMATISM.<sup>1</sup>

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I have not infrequently encountered cases of astigmatism, in which, after having corrected the error in each eye separately, and on testing both eyes simultaneously in binocular vision, have found that vision proximum was not perfect, and in order to attain normal vision near at hand in binocular sight the angle denoting the axis of the cylindrical glass must be changed in one or both eyes.

In correcting this binocular defect types and the astigmatic bars were employed. If the patient looks upon the floor, it will seem to incline to the right or left, and on changing the axis of one or both cylinders, the surface will appear level. But the same defect will be apparent if a board 12×3 inches, with parallel sides, be held in front of the patient at one metre, and on a level with the eyes. In these cases, then, the answer will be, that the right or left end of said *object-board* is wider than the other. The angle of one or both cylinders is changed

<sup>1</sup>Read before the Ophthalmological Section of the A. M. A.

until each end of the object-board seems equally wide, or in other words, the sides are parallel, and then it will be found that the astigmatic bars and the types are seen normally in near and far vision in binocular vision. All of my refraction cases are estimated not only by the usual methods, but the test as given is applied to all cases of astigmatism before the investigation is regarded as complete. The use of glasses thus adapted, has been successful in practice with but one or two exceptions, and in these the use of cylinders had to be dispensed with and spherical glasses employed.

This defect in binocular vision does not occur, of course in all cases of astigmatism; but observation has taught me that such errors are far from being uncommon.

The following explanation offered of binocular astigmatism seems more rational than any other with which I am familiar.

If a perpendicular be raised anteriorly, and horizontally midway between the eyes, from a base line intersecting each *fovea centralis*; then in testing each astigmatic eye separately, the AXIS OF VISION, will, in remote vision, be parallel to said perpendicular. If the ocular muscles are normally balanced in action, the plane which cuts the visual axis in the cornea will be vertical. In a normal eye, *its fellow being covered*, during near vision *still* the visual axis may be parallel to our perpendicular, and hence the angle of the axis of the cylindrical glass may often be the same in remote and near vision *when each eye is tested singly*. In binocular vision when astigmatism is present, the distance is so great in remote vision, that the visual axes are each parallel to our perpendicular and to each other, and when the ocular muscles are harmonious in action, objects, as types and astigmatic bars, are seen in normal form. So will vision be perfect near at hand, in astigmatism, provided this due balance is maintained in these muscles; but it is evident, that in proximal vision the interni, inferior obliqui, and superior and inferior recti muscles, must exercise increased force and act in concert. If these muscles do this, there can be no binocular astigmatism (in the sense cited) which requires recorection after each eye has been separately corrected,

and in *vision near at hand*. But if these muscles are not harmonious, then the plane of the rays of light remaining the same, *that is vertical*, and the *axis of rotation* of the eye at its upper extremity inclining to the right or left, then it follows, that the relation of the axis of the cylinder and the astigmatic meridian of the cornea has been changed, and in order to restore this relation the axis of the cylinder must be made to correspond with the modified position of the defective corneal meridian.

Let the following case illustrate. In binocular and proximal vision: Suppose the left inferior oblique fails to act sufficiently to maintain the axis of rotation vertical, and that the inner fibres of the left superior rectus incline said axis at its upper extremity towards the nose; then the rays of light will no longer cut the cornea in its vertical meridian, but towards the temporal side of the should be vertical plane of the cornea. If the defective axis of the cylinder was at an angle of  $180^{\circ}$  in remote vision, for proximal vision, the axis of the glass will have to be turned upwards towards the displaced axis of rotation of the eye-ball, as many degrees as this axis has deviated from the normal vertical perpendicular. If to  $10^{\circ}$ , then the angle would be  $10^{\circ}$  instead of  $180^{\circ}$  for the cylinder, the scale running from the temporal side. In other words, the measure of the deviation of the axis of rotation is the number of degrees of axis-displacement of the cylinder, required in order to cause both sides of our object-board to appear parallel.

By trial the proper degree is found and in which eye the correction should be made, or if both eyes should be corrected.

In remote vision, the ocular muscles may, or may not be harmonious, but if these are normally balanced in action when accommodation is at rest, it is not difficult to comprehend, when the muscles supplied by the filaments of the third nerve are active, as in proximate vision, that, this relation may be modified, and the *axis of rotation* so changed as to demand a re-correction for near and binocular vision. This change of cylinders does not interfere with normal remote vision.

As these changes in the axis of the cylinders are observed in remote vision when the eyes are under the full influence of mydriatics, it results that the modifications in the axis of rotation, cannot be due, at least directly, to accommodation. This may be illustrated by the following case: Miss S. L. æt. 28 years. When under duboisia, she requires in the R. E.  $-1.0$  sph.  $\ominus - 0.5$  cyl. ax.  $130^\circ$  and in L. E.  $-0.75$  sph.  $\ominus - 0.5$  cyl. ax.  $40^\circ$ .  $V_2 = \frac{1}{4}$ , and the astigmatic bars appear normal. But in binocular vision when the object-board is placed at one metre, the left end of said board seems wider, when the left cylinder is turned to  $30^\circ$ , the sides of the object board are seen parallel and the floor is level. When the effects of the mydriatic had passed off, a week later, the cylinders at  $30^\circ$  and  $130^\circ$  induced seeming parallelism of the object board and a level floor.

A few cases will be given illustrating the change of axis of cylindrical glasses, in order to obtain normal and proximal binocular vision.

Miss A. V. C. æt. 18 years. Under duboisine she requires in R. E.  $-0.5$  cyl. ax.  $90^\circ$   $V = \frac{1}{4}$ ; and in L. E.  $-1.25$  cyl. ax.  $45^\circ$   $V = \frac{1}{4}$ . At one metre the object-board is narrower at the left end, and floor inclines to her left in binocular vision, on turning the left cylinder to  $60^\circ$  the floor appears level, and the sides of the board parallel, and the distance types and astigmatic bars are now seen normal.

Miss M. C. æt. 27 years. Without mydriatic her case reveals that she requires in R. E.  $+4.5 \ominus + 1.25$  cyl. ax.  $105^\circ$   $V = \frac{1}{24}$  and  $\frac{3}{.29}$  D, and in L. E.  $+2.5 \ominus + 1.5$  cyl. ax.  $120^\circ$ ,  $V = \frac{1}{24}$  and  $\frac{1.5}{.29}$  D.  $V_2 = \frac{1}{12}$  and  $\frac{1.5}{.29}$  D. The object-board sides are not parallel in binocular vision at 1 metre, or the floor level, until the left cylinder-axis stands at  $120^\circ$ , which later does not correspond with to the axis of the right eye, or  $75^\circ$ .

Miss A. H. B., æt. 31 years. Without mydriatic requires in R. E.  $+0.5 \ominus + .25$  cyl. ax.  $60^\circ$ ,  $V = \frac{1}{4}$  and  $\frac{.6}{.30}$  D; and in L. E.  $+0.5 \ominus + .25$  cyl. ax.  $100^\circ$   $V = \frac{1}{4}$ .  $V_2 = \frac{1}{4}$ , and  $\frac{.6}{.30}$ . But binocular vision is not normal at one metre, unless the axis

of the right cylinder is at  $60^\circ$  in line of  $80^\circ$ , which latter would correspond with the axis of  $100^\circ$  in the left eye.

Miss J. R., æt. 31 years. Under duboisine, she requires in R. E.  $+0.75$  cyl. ax.  $50^\circ$ ,  $V = \frac{1}{4}$ ; and in L. E.  $+0.75$  cyl. ax.  $140^\circ$ ,  $V = \frac{1}{4}$ ,  $V_2 = \frac{1}{4}$ . But binocular vision at one metre is not normal when the axis is at  $130^\circ$ , left eye. A week later when the effects of the mydriatic had passed off binocular vision was perfect with the angles  $140^\circ$  and  $50^\circ$  in far and near vision.

Mr. J. G. S., æt. 18 years. Under duboisine he requires in R. E.  $+0.75$  cyl. ax.  $40^\circ$ ,  $V = \frac{1}{4}$ , and in L. E.  $+0.75$  cyl. ax.  $90^\circ$ ,  $V = \frac{1}{4}$ ,  $V_2 = \frac{1}{4}$ . After the effect of the mydriatic had passed off, the axis of the right cylinder had to be turned to  $90^\circ$  in order to obviate binocular astigmatism at one metre, and then remote vision was perfect.

Mr. J. N. S., æt. 34 years, requires  $+2.75$  cyl. ax.  $75^\circ$  V. R. E.  $= \frac{1}{9}$ , and  $+3.5$  cyl. ax.  $90^\circ$  V. L. E.  $= \frac{1}{9}$ ,  $V_2 = \frac{1}{9}$ , and  $\frac{8}{30}$ . But the object-board was not seen parallel at one metre. On turning the left cylinder axis to  $105^\circ$  binocular vision near and far became normal so far as glasses could accomplish, and these continued to serve him well.

Mr. F. G., æt. 27 years. Under duboisine requires R. E.  $+1.25$  cyl. ax.  $180^\circ$ ,  $V = \frac{1}{4}$ , and in L. E.  $+0.5$  cyl. ax.  $180^\circ$ ,  $V = \frac{1}{4}$ . But  $V_2$  while  $= \frac{1}{4}$  reveals the sides of the object-board not parallel. On turning the axis of the right cylinder to  $30^\circ$  the object-board is seen normally, and  $V_2 = \frac{1}{4}$  and  $\frac{6}{30}$  D.

Mr. L. I., æt. 19 years. Without duboisine the angle for each eye was  $90^\circ$ , but when under this mydriatic he required in R. E.  $+3.5$  cyl. ax.  $70^\circ$ ,  $V = \frac{1}{24}$ , and the same cylinder in L. E. at  $100^\circ$ ,  $V = \frac{1}{24}$ . The bars and types were seen normally.  $V_2 = \frac{1}{24}$  and  $\frac{8}{28}$ . These glasses were given, and failed to give proper vision. He was given  $+3.5$  cyl. ax.  $90^\circ$  for each eye, and binocular far and near vision became normal. He was not brought under mydriatic at the second application. It is certain that this patient under the mydriatic saw in binocular vision normally. But after accommodation was

fully restored, vision was normal in each eye with the first glass, and to secure binocular far and near vision, each cylinder was changed to  $90^\circ$ . This result may be due to the stimulus of accommodation exciting through the filaments of the third nerve, the superior recti in each eye.

It is true that with the cylinders at  $90^\circ$  in each eye remote vision of the bars and types was normal. This can only be accounted for on the supposition, that, even in *remote vision*, there must have been present accommodation. It is also true in this case that this ametrope developed  $= +4.5$  astigmatic hyperopia in each eye under duboisine, but accepted only a  $+3.5$  cylinder when the effects of the mydriatic had passed off. He therefore was exercising  $= +D 1.0$  of accommodation for distant vision, and it is probable this would stimulate the superior recti sufficiently to change the axis of rotation in binocular remote vision, to  $90^\circ$  each eye. This man's unaided near point was 19 cm.  $= D 5.3$ , and as he had  $= 4.5 D$  of hyperopia, his accommodation was  $= +4.5 + 5.3 + 9.8 D$ , which is equal to what he should have had at 20 years of age. In correcting  $+3.5$  of the astigmatism he would possess an excess of accommodation  $= 9.8 - 3.5 = 6.3 D$  in proximal vision.

Miss M. C., aged 30 years. Without duboisine and with  $-1.0 \text{ C} - 0.75 \text{ cyl. ax. } 25^\circ$ , V. R. E.  $= \frac{1}{4}$ , and with  $-1.25 \text{ C} - 0.75 \text{ cyl. ax. } 150^\circ$ , V. L. E.  $= \frac{1}{4}$ ,  $V_2 = \frac{1}{4}$ . In binocular vision at one metre the right cylinder gave only normal vision when the axis was turned to  $180^\circ$  or  $0^\circ$ , or horizontally. Then the floor was also level, the bars alike and types seen normally in far and near vision. After the effects of the mydriatic had passed off these results held good.

Miss A. B., æt. 23 years. Without mydriatic and with  $-0.5 \text{ C} + 0.25 \text{ cyl. ax. } 180^\circ$ , V. R. E.  $= \frac{1}{5}$ , and with  $-1.75 \text{ cyl. ax. } 180^\circ$ , V. L. E.  $= \frac{1}{6}$  and  $V_2 = \frac{1}{5}$ , and  $\frac{6}{30} D$ . On using duboisine the formula became  $-0.25 \text{ cyl. ax. } 145^\circ$  and V. R. E.  $= \frac{1}{5}$  and  $\frac{6}{28}$ ; and  $-1.0 \text{ C} - 1.25 \text{ cyl. ax. } 180^\circ$  V. L. E.  $= \frac{1}{5}$  and  $\frac{6}{28}$  and  $V_2 = \frac{1}{4}$  and  $\frac{6}{28}$ . Now the object-board sides were parallel, the floor level, and the bars normal. But the tests for binocular vision were not normal when the axis of the right

cylinder was placed at  $180^{\circ}$ . These glasses held good subsequently.

It may be claimed that the foregoing results are due to our not having found the correct axis in the monocular tests of each eye. This assumption would be untenable because every care was taken in correcting each eye singly, both in far and near vision; but on attempting binocular vision, especially at one metre or less distance from the ametropes, the sides of the object-board were not seen parallel, nor the floor level. When the axis of one or both cylinders was changed then, and then only, binocular vision-tests became normal. But in these cases the axes of the cylinders did not correspond. The explanation given may not be the true solution, and accommodation may have a direct influence in the result by changing the focus of individual sectors of the crystalline lens, but the fact remains that there is such a phenomenon as *binocular astigmatism*.

If in calling your attention to this subject I shall induce any to investigate it and possibly determine the true solution, I shall rest content with the result.

## ON THE "CANDY"-TREATMENT OF CONJUNCTIVAL AFFECTIONS.<sup>1</sup>

BY ADOLF ALT.

MR. PRESIDENT AND GENTLEMEN.—Before reading the following I wish to state that this paper is in no way prompted by any personal feeling, and that I want it thoroughly understood that I am not attacking men, but what I think perverted science.

In the April number 1888 of the *St. Louis Courier of Medicine*, Dr. H. L. Wolfner, assistant to the ophthalmic department and lecturer on the use of the ophthalmoscope, St. Louis Post-Graduate Medical School and Polyclinic, publishes a paper, which has probably been read by a great many of you, entitled "*Criticisms on the Present Mode of Treating Conjunctival Affections, with Suggestions for the use of a new Remedy*," which I would surely have let pass unchallenged, if some statements contained in the paper did not make it appear, at least, as if the author was only the mouthpiece of a gentleman whose name in this community is too well known, and whose authority might, therefore, be too weighty to allow this matter simply to be overlooked.

When I wrote the title of this paper, I did so on account of the new remedy for treating *chronic* conjunctival affections which the author recommends, namely, molasses. Although for all I know, it may be an excellent remedy, and although the criticising author got it by hearing of a quack who used something that looked like it, yet, the very thought of using

<sup>1</sup>Read before the St. Louis Medical Society, May 5, 1888.

"molasses" in the eyes appeared to me to be so ludicrous that for the time it overpowered all other impressions left in my mind after the perusal of the author's paper. I saw before me a whole waiting room full of patients with chronic conjunctival affections, on a hot St. Louis summer day, their eyelashes shining and glued together with the sweet stuff, and the flies buzzing about and trying to get a taste.

Yet, let alone these funny ideas! The object of my paper is a considerably more earnest and important one, since it will deal with teachings sent out to the general practitioner on authority.

The paper above referred to has for its object, as stated in its introductory lines, *to criticise the present mode of treating acute conjunctival affections*. It goes on to say:

"In looking over the text-books and monographs written on this subject, it will strike even a casual observer as curious that ophthalmologists should all agree to use the same remedies in the treatment of acute conjunctival affections."

A queer criticism, indeed. Why should not all ophthalmologists use the *same* remedies in any given disease, or for that matter, all doctors, provided that the remedies be good ones? And do we not all, even the author of the paper, do this very same thing continually?

This criticism, however, poor as it is, must appear the stranger since, as far as my knowledge and experience go, it is not the case, as the paper has it,

"That the list of the remedies used by all oculists in acute conjunctival affections begins with sulphate of zinc or boracic acid, and ends with nitrate of silver, and comprises all therapeutic agents commonly known as astringents."

*In the first place*, every ophthalmologist who has not come down to the level of a mechanic, individualizes his cases, and

according to his experience treats every case on its own merits. *In the second place*, what does the paper mean with *acute* conjunctival affections? As it later on appears, it includes *every* form of *acute* conjunctivitis, from a simple hyperæmic condition to the gonorrhea of the conjunctiva—a large field, indeed, to be covered by one remedy or one method of treatment, which, as we will see later on, the paper recommends. *In the third place*, in almost all the text-books I looked over, and they are a goodly number, nitrate of silver is the chief remedy recommended in acute catarrhal conjunctivitis and blenorrhea. *In the fourth place*, nitrate of silver is not usually classed as an astringent, but as a caustic.

The paper, therefore, throws diseases and remedies of a very different character into one pot, giving the casual reader the impression that oculists, *as a class*, are not a very scientific body of professional workers. Against this idea I want to enter a *most emphatic* protest. Of course, there are ophthalmologists and ophthalmologists, but as little as it discriminates with regard to diseases and the usual remedies—as little does this paper discriminate between the mechanic and routine worker and the large class of honest and honorable workers. This latter class the paper tries in the eyes of its readers to belittle by any means, in order to gain the more for its own recommendations of a yet much more indiscriminate cure-all.

The paper evidently hits *us other* ophthalmologists the hardest, at least in the author's intention, when it fires at us the following remarkable shot:

"If specialists are asked why do you use astringents in this class of diseases, the answer is, invariably, that their patients get well under their use, and therefore why should they discard them?"

Has the author any better reason to offer for the use of a remedy than the one which he tries here to throw into our faces? Does *he*, perhaps, recommend his remedy because the patients do *not* get well under its use? This absurd objurga-

tion is followed up by another equally remarkable statement, viz., that

"The physician will do a certain thing simply for the reason that his grandfather did the same, not because his common sense dictates any such line of treatment."

The author of the paper was assuredly not for a moment aware how grossly he, *himself*, a physician and ophthalmologist, insulted with these words the host of medical men, who, *however progressive*, have enough left of the true conservative spirit to gratefully thank their grandfathers for having brought our science to what it was when we began to take the trust, and who, *however conservative*, have the true spirit of progress and are eager to learn and help to find new remedies and appliances for the relief of suffering humanity; and, further, to apply it as soon as they have found out that the new is better than the old; men, who never forget that the to-day is but the child of yesterday, but who work to help to make more glorious and more blissful the to-morrow.

This fling at the profession is the worse, since it is backed by the following statement, which seems to me to give the main reason for the writing of the remarkable paper. It states as follows:

"Dr. Michel, several years ago, 1878 or 1879, read before the State Medical Society a paper on this subject, in which he denounced the use of astringents in acute conjunctival inflammations, and gave his reasons for abandoning their use. For some reason or reasons the profession at large has not accepted his suggestions, and prefers to travel in the same old rut, which leads to an immense number of cases of chronic inflammatory granulations."

Now, if a scientific paper does not receive the general acclamation which its author, and but naturally so, thinks its due, is that a reason why he should accuse the whole profes-

sion, if, even implicitly only, of neglect? I, myself, for instance, have never been so fortunate as to see or even to hear of the paper just mentioned until I read the article at present discussed, and I dare say a good many more members of the profession are in the same position. Even a thoroughly *good* paper, when buried like this, may share such a fate. But would it not be more natural to think that by accident the suggestions of Dr. Michel have not become known to many, or, that they have, perhaps, been tried by others and have not yielded in their hands the same results? These would surely be more appropriate explanations. The author, however, not satisfied with saying that, for some reason or reasons *the profession at large has not accepted these suggestions, etc.*, adds, *which leads to an immense number of cases of chronic inflammatory granulations.*

Here we have it, as it were, in a nutshell. The profession, or to say it plainly, ophthalmologists at large, by their *bad* practice, bring about "*an immense number of cases of inflammatory granulations.*" The deductions from this accusation, gentlemen, I leave to you to make.

Not forgetting the fact that *not* astringents, but caustics and antiseptics are now commonly in use in the treatment in acute conjunctival affections (which is contrary to the author's statements), we will now see what reasons he offers *against* the use of astringents. Although fighting, as you see, against a straw-man, set up by himself, the author has to offer a *new* theory, but *without proof*, as he says: "*Experiments are now being made by Dr. Michel to prove that the explanation offered is the true one.*"<sup>1</sup> From the fact that the pain originally caused by astringents applied to the conjunctiva subsides after a number

<sup>1</sup>In the discussion following the reading of this paper, Dr. Wolfner stated, that after having dropped nitrate of silver into a rabbit's eye for several weeks, he found the corneal epithelium several times thicker in that eye, than in the fellow which had been left alone. This is the alleged proof of the theory above referred to. The gentleman stated further, that nitrate of silver did not *injure* the inflamed conjunctiva because the tears changed it at once into the inert chloride of silver! What then, I ask, causes the eschara?

of applications, we are asked to believe on authority that the continued irritation caused by the astringents produces "*a hypertrophy of the epithelial tissue*" not of the *conjunctiva* as we would expect, but "*of the cornea.*" *Corns on the cornea*, as it were. Indeed, the paper says: "*The thick horny, epithelial masses in the laborer's hand, and corns on the feet are caused in this way.*" Even granted that this might perhaps be true, what, I ask, have these corns on the cornea got to do with the "*immense number of cases of chronic inflammatory granulations*" which the paper accuses all oculists of producing, who may be in the habit of using astringents in acute conjunctival affections?

Surely the writer did not mean to accuse us of two such horrible crimes? The paper goes on to say:

*What then is the proper treatment for acute inflammations and congestions of the conjunctiva?*" Again, there is no discrimination at all between congestion and inflammation, or between the different forms of conjunctival inflammation.

But, what is *ex cathedra* given to us as the *proper* treatment in *all* these cases? Listen:

"Drop nothing into the eye that will irritate, and therefore not even a drop of water. [I suppose on account of the danger of producing corns on the cornea, or chronic inflammatory granulations, ALT]. Use soothing applications to the closed lids, either hot or cold, whichever is more grateful to the patient. Most cases will be benefited more by the use of compresses wrung out of a cold solution of opium than by anything else. The compresses should be light, and should be frequently dipped into the solution, each application lasting between fifteen minutes and a half hour, and repeated four times a day. In addition to this apply a bland, unirritating unguent to the lashes before retiring, and in this way prevent the lids from gluing together in the morning."

Now comes the most noteworthy statement:

"Purulent and gonorrheal ophthalmia should be treated exactly in

the same way, except that the solution and salve must be used more frequently and the parts kept scrupulously clean. No irritating drops no syringing out the conjunctival sac with warm water, no nitrate of silver, no bichloride of mercury, and your patient will get well. This plan of treatment has always been used in the eye department of the Polyclinic, and we have to record the first failure. This will not be believed by most ophthalmologists [most assuredly not, ALT], yet it is a fact, nevertheless, that not one of our cases of purulent or gonorrheal ophthalmia has resulted in loss of vision, or had even an ulcer of the cornea, unless the patient was seen after these changes had already taken place."

With all due deference to these most fortunate experiences at the Polyclinic with this mode of treatment, I would just like to ask what is the exact number of cases of purulent and gonorrheal conjunctivitis so treated? Truly the experience gained in the largest possible number of cases seen at the Polyclinic in the few years of its existence can only be very minute, when compared with the experience of all oculists the world over who have for many years treated such cases. Such teaching is, according to the accumulated experience of the vast majority, absolutely *bad teaching*, and woe is to the majority of eyes affected with purulent and gonorrheal conjunctivitis, if *this teaching is listened to*. Indeed, this is even worse, than what the midwives do, to whose account thousands of lost eyes still fall every year. They at least try to wash the newly born babes' eyes with chamomile tea, or mother's milk. All over the world honest doctors are trying to teach the people *rational* medicine (although it be empirically come to): all over the world oculists try to free the people of this, the most fruitful source of blindness, viz., purulent and gonorrheal conjunctivitis, by teaching and ordering absolute cleanliness and the continued and careful removal of all pus from the conjunctival sac, whether it contain in reality a specific germ or not; and all over the world immense good has come and will yet come from such teaching. And here, in 1888, this paper goes out, at least into our immediate neighborhood, and tries to

teach you to go back to the old evils, to undo all that may, perhaps, by progressive science have been accomplished.

Here again, therefore, I want to enter my most emphatic protest. If the author of that paper is willing to abide by his teachings until dire results have shown him their fallacy, let *him* do so, but do not *you* follow him. The blinded babe or adult, will, according to the opinion of the vast majority of men of thought and learning, have a right to curse you, and will do so assuredly, let alone the pangs of your own conscience.

There is one more sentence in this paper, which I can, even at the risk of tiring you, not silently let go by. It says:

"Eye specialists, as a rule, pay very little attention to general pathology, and it is for this reason and astringents, that so many chronic eye cases are seen."

Whoever has had a chance and the inclination to follow scientific ophthalmology in its rapid and enormous progress, and the author of that paper as an eye-specialist and teacher surely should, if he has not done so, knows, without my stating it, that *no* specialty has so continually and preeminently paid attention to general pathology. *No* speciality has so helped in the progress of the knowledge of general pathology, as ophthalmology has done, and is doing to this day. I need not dwell on this. Every one of you knows it. This statement again then is surely not applicable to the vast majority of oculists. To be sure, if dosing every nine eye-patients out of ten with some iron mixture, means paying attention to general pathology, then, and then only, is the statement correct.

If that paper is starting in a new era of scientific communications, if it is to be in future the correct thing to try and force one's own ideas upon the profession, by flinging mud at all that may be of a different opinion, and by speaking in sneering terms of the profession at large, why then science is to be pitied indeed.

Mr. President and Gentlemen, I do not like the idea of posing before you as a champion of what I consider science.

If I appear to have done so, I have done it with reluctance. I felt that *somebody* had got to do it, and that such a paper, full of sentences such as those I have drawn your attention to, could not be allowed to go forth unchallenged, and so reluctantly *I* did it. But, allow me to emphatically state here again, that no *personal* motive prompted me, and I hope my strictures will not be taken in that light. I should much rather prefer to have it all—"Molasses."

## AMERICAN MEDICAL ASSOCIATION.

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We regret to have to notify our readers that Dr. D. De Beck, of Cincinnati, who had kindly consented to write us a report of the work done in the Ophthalmological Section, was by sickness prevented from doing so. The only synopsis of a paper read there which we have to offer is the following one by Dr. J. J. Chisolm, of Baltimore.

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### V=<sup>20</sup>/<sub>20</sub> AND NO. 1 BRILLIANT NOT INCOMPATIBLE WITH ANNOYING ASTIGMATISM.

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At the last meeting of the National Medical Association, Dr. Julian J. Chisolm, of Baltimore, read a paper before the ophthalmological section, on the value of the 0.25 Dioptic cylinder in the correction of low degrees of astigmatism, giving as the basis of his paper his personal experience for the year 1887, as taken from his office case book. He had prescribed cylinder glasses for 493 patients, but as many of these had eyes which differed in kind, degree and angle of the faulty meridian, he thought it best to classify them as 986 eyes. Of these 546 exhibited a small degree of irregular refraction which 0.25 dioptic cylinder corrected.

These patients were most frequently the advanced students of the higher schools and were doing forced eye work. They usually had V=<sup>20</sup>/<sub>xx</sub> and could read No. 1 of the test types. A weak minus glass would sharpen distant outlines.

The first point made was, as these patients suffered when their eyes were used and weak cylinder glasses corrected the fault and removed the eye discomfort, V=<sup>20</sup>/<sub>xx</sub> was not incompatible therefore with annoying forms of astigmatism.

The next point brought out was that when the astigmatic

dial was carefully examined, 0.25 c dioptic would correct the faulty lines and that 0.5. c. would over-correct. The most frequent faulty meridian was the horizontal, then the vertical and finally the oblique, and that the latter caused the most trouble. That when eyes possessing the low degree of astigmatism broke down under the pressure of hard study, they became extremely irritable and could not be used. A few minutes of reading would cause eye pain and headache, and that even the light of day was uncomfortable requiring the use of smoked glasses. Rest did these eye no good, if it was again to be followed by hard work. Cylinder glasses alone would relieve the irritation, and often they had to be constantly worn to give permanent comfort. The 0.25. D. cylinder was the lens which removed all the discomfort and permitted the eyes to be freely used. Dr. Chisolm had often to substitute 0.25 D. c. for 0.5 D. c. brought from other specialists with the complaint that the eyes were still painful. When the stronger glasses were discarded and the weaker ones were used, all pain disappeared. The conclusion drawn from these experiences was that ophthalmic surgeons who would not recognize less than a 0.5 diopter of astigmatism discharged a large number of their astigmatic patients unrelieved.

A third point made in the paper was that in nearly all cases in which patients were annoyed by this low form of astigmatism the kind and the angle of faulty curvature was changed under the action of atropia,  $a-0.25-0^\circ$  becoming  $a+0.25. 90^\circ$ . Should the + lens be prescribed as the eye under atropia called for, they could not be as comfortably worn as would be the concave cylinder which the faulty vision required for its correction before the use of atropia. In other words, that in the low degrees of astigmatism atropia gives a fictitious condition which is very misleading in practice. In the majority of such cases of astigmatism he does not use atropia for the adjustment of lenses. Only in cases in which the lens first given does not bring comfort, is atropia used to confirm the diagnosis or more especially to establish the angle in cases of doubt.

The chief object of the paper was to call attention to the



TABLE II.

SHOWING THE DIRECTION OF THE ERROR OF REFRACTION.

No.	ANGLE.
267	- - - - -0.25°
90	- - - - -0.25 <sup>90</sup>
79	- - - - -0.25 oblique.
29	- - - - +0.25°
85	- - - - +0.25 <sup>90</sup>
16	- - - - +0.25 oblique.
63	- - - - -0.5°
23	- - - - -0.5 <sup>90</sup>
37	- - - - -0.5 oblique.
6	- - - - +0.5°
28	- - - - +0.5 <sup>90</sup>
14	- - - - +0.5 oblique.
23	- - - - -0.75°
9	- - - - -0.75 <sup>90</sup>
15	- - - - -0.75 oblique.
4	- - - - +0.75°
10	- - - - +0.75 <sup>90</sup>
7	- - - - +0.75 oblique.
15	- - - - -1.°
6	- - - - -1. <sup>90</sup>
15	- - - - -1. oblique.
1	- - - - +1.°
13	- - - - +1. <sup>90</sup>
10	- - - - +1. oblique.
9	- - - - -1.25°
5	- - - - -1.25 <sup>90</sup>
12	- - - - -1.25 oblique.
0	- - - - +1.25°
5	- - - - +1.25 <sup>90</sup>
4	- - - - +1.25 oblique.

THE STATE MEDICAL SOCIETY OF ARKANSAS.

OFFICE OF THE SECRETARY. }  
LITTLE ROCK, MAY 15, 1888. }

EDITOR AMERICAN JOURNAL OF OPHTHALMOLOGY.—In compliance with instructions I transmit herewith the following resolutions adopted at the thirteenth annual session of the State Medical Society of Arkansas, held at Fort Smith, April 25, 26 and 27, 1888, and ordered to be furnished to the American Medical Association, the medical and religious press, and to the State Medical Societies, soliciting their co-operation in bringing about a correction of these grievous and palpable errors:

*Resolved*, That the members of the State Medical Society of Arkansas have for years observed with pain and mortification the patronage given to charlatanism in all its multifarious aspects by the religious press of our country.

*Resolved*, further and most specifically. That the appearance in religious papers, ostensibly published for the inculcation of truth and morality, of serious homilies on prayer and praise side by side with cures for consumption, cancer, Bright's disease and other incurable ailments to which an editorial endorsement is often given, as well as secret preparations under the cloak of remedies for disease, but really intended for purposes of foeticide and other immoral uses, largely tends to shake the confidence of the profession of medicine in the integrity and purpose of the managers and editors of such journals.

*Resolved*, further, That it has been the well known custom of the profession to render services gratuitously to clergymen, which we do not regret nor do we propose to recall, yet we must assert that the frequent occurrence of endorsements and recommendations of the clergy of peripatetic doctors and advertising charlatans has in many instances been the only reward of our gratuitous services.

*Resolved*, further, That we are aware that the editors of religious newspapers admit the painful situation in which these

advertisements place them, and attempt to excuse themselves by saying that it is necessary to take these advertisements in order to obtain means to conduct their papers; but, in the language of orthodox theology we would say: "Put behind you that damnable doctrine that we must do evil that good may come."

*Resolved*, further, That, as a society, we declare that the continued perpetration of the above offenses by some of the clergy and religious press brings harm to the bodies of their constituency, and damages materially their influence upon the thinking class of the medical profession.

*Resolved*, That the secretary be instructed to furnish copies of these resolutions to the religious and medical press of the United States, to the American Medical Association and to the state medical societies, soliciting their co operation in bringing about a correction of these grievous and palpable errors.      Very Respectfully.

L. P. GIBSON, M.D., Secretary.

## TRANSLATION.

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### FRENCH SOCIETY OF OPHTHALMOLOGY.

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The following passages are translated from a report in the *Semaine Medicale*:

May 8. *M. Panas* (Paris), read a paper on

#### ENUCLEATION IN PANOPHTHALMITIS.

According to von Graefe the operation of enucleation of the eyeball during the course of panophthalmitis is looked upon as something very grave, and likely to produce fatal meningitic complications.

In order to give this theory its just due I will relate the following observation, which is of great importance.

A man recently came to see me who suffered from a panophthalmitis subsequent to an operation. The eyeball was enucleated, although the suppuration was in full progress, but it was done under the most rigorous antiseptic precautions: washing, drainage and conjunctival suture. The second day after this operation the patient made some complaints, and was examined, and a pleuritic effusion was detected, which we diagnosticated as being of septic origin. A few days later the patient died. At the autopsy we found an extensive purulent meningitis, a sero-purulent pleurisy and multiple abscesses in the lungs. All of these suppurative lesions contained the same micro-organisms: the staphylococcus albus mixed with a smaller number of streptococcus, and these were in abundance within the panophthalmitic eyeball.

The patient had, moreover, been suffering from an old interstitial nephritis.

To sum up, the extent and the multiplicity of the infectious lesions prove, that they were coincident with the panophthalmitis before the operation of enucleation. The similarity between the micro-organisms found in the eyeball and in the different suppurative foci within the other organs, confirms this view materially.

This observation, therefore, shows that the infection comes from the panophthalmitic eye and by way of the sheaths of the optic nerve is carried into the meninges and from there to other organs.

From such a consideration we must at once draw this practical conclusion, that we must prevent the general infection of the body, and enucleate as quickly as possible the primary focus of infection, that is, the panophthalmitic eyeball.

You see, this conclusion is in conformity with the actual laws of general surgery, which prescribe the total extirpation of local foci of infection, but it absolutely contradicts the principle formerly laid down by von Graefe concerning operative interference in panophthalmitis.

I want to offer, therefore, the following conclusions :

The enucleation must be made the moment that we find that our efforts to arrest the progress of the suppuration of the eyeball are unsuccessful.

Even when the panophthalmitis is at its height we should enucleate, but under the express condition, that there are as yet no symptoms which might indicate a generalization of the infection, and that the patient has no organic disease, as albuminuria, diabetes, etc.

Of course, the antiseptic measures during the operation must be of the most rigorous.

#### DISCUSSION.

*Dr. Dufour (Lausanne).*—In performing enucleation during a panophthalmitis we often obtain good results, and I have

seen it more than once in my practice. But there are also unfortunate cases which end fatally, and these show that the operation creates a combination of circumstances which is favorable for a general infection.

*Dr. Abadie.*—I have always been greatly astonished to hear the proposal to enucleate an eyeball during an attack of acute panophthalmitis, and this the more so, since this proposition is always made after a number of deaths have followed the operation.

When panophthalmitis shows itself at first, the morbid process is, so to speak, intra-ocular. If you remove the eyeball without a very careful dissection of Tenon's capsule, you disseminate the infectious material into the orbital cellular tissue, and you expose the patient to a diffuse suppuration, and a purulent and fatal meningitis.

However this may be, the statistics with regard to this point are clear, the fatal cases in consequence of enucleation are infinitely rare. But, when they occur it is almost always in cases of panophthalmitis. This is so true, that three years ago Prof. Alfred Graefe (Halle), frightened by two successive fatal cases after enucleation on account of beginning panophthalmitis, has proposed to give up this operation altogether, and to adopt in its stead that of evisceration. I admit, that I still prefer this operation to enucleation. I consider it less dangerous; but it has the inconvenience of causing very considerable pain for several days. I prefer to make a large horizontal incision into the eyeball which lays the tissues bare, removes the pain and is absolutely inoffensive, as I have never known death to follow this operation.

*Dr. Motais.*—In order to find in how far the enucleation of a panophthalmitic eyeball is really responsible, it would be necessary, it seems to me, to find the number of cases in which death from meningitis followed panophthalmitis without a surgical intervention. I have seen two cases of this kind. We have, therefore, a right to ask in case of death after enucleation, whether the operation was the cause of the panophthalmitis, or whether the patient had been infected previously.

Moreover, if on the one hand, the operative injury may be accused of having incited the progress of the inflammatory accidents, on the other hand the enucleation offers a large space for the influence of antiseptics. I agree, therefore, with Dr. Panas, and I prefer enucleation in panophthalmitis. I must, furthermore, add that I have never seen death follow it.

*Dr. Gayet.*—I am going to add a few words only to what Dr. Motais has said, with whom I agree perfectly. I have operated in more than sixty or eighty cases of panophthalmitis, and have had only one fatal accident in a case in which the patient was infected at the time of the operation, like the patient whose history Dr. Panas has just related. We cannot say that the enucleation brings with it the generalization of the inflammation, since the contrary takes place, and we observe that the inflammatory symptoms subside at once after the operation. Finally, the large incision into the eyeball gives only a momentary relief, and evisceration is the more dangerous since it allows the inflammatory symptoms to go on.

*Dr. Fieuzal.*—I perfectly agree with these remarks, since in every case in which I made a crucial incision I had afterwards to perform enucleation.

*Dr. Meyer.*—The gist of the experience which is here represented by the colleagues who took part in this discussion, shows that we can perform a great many enucleations in panophthalmitis without having to deplore one fatal case.

This undoubted fact should, however, not lead us to forget, that the well known fatal accidents after enucleation have taken place especially, when enucleation had been performed at a period in which panophthalmitis was complicated by phlegmone of the orbital tissue. On the other hand, the autopsies in these cases have shown the existence of purulent meningitis which had its origin in the orbit. It, therefore, seems to me, that the greatest prudence and reserve cannot be superfluous, when we are confronted with a case of panophthalmitis accompanied by phlegmone of the orbital tissue.

Where this latter complication does not exist, I do not hesitate to perform enucleation. This operation seems to me to be

greatly preferable to all other surgical intervention, like the large transverse incision, and evisceration. The first does not avail anything, because it does not remove the purulent matter enclosed within the eyeball which is too thick to run out. Evisceration has only one advantage over enucleation, that it leaves a better stump for the artificial eye ; this advantage, however, is too dearly bought by the long painful days which we gladly would spare our patients.

*Dr. Vacher.*—I prefer enucleation to evisceration just on account of the form of the stump, since in evisceration the eye shrinks in a way which is very disagreeable.

*Dr. Dianoux.*—I find that the observations of Dr. Meyer, concerning enucleation during a panophthalmitis are not very justifiable. In fact, this disease in itself is infectious, and the operation logically is less important as a cause of infection than the inflammatory affection itself. In one word, it is not proven that the operation disseminates a disease which in itself has the tendency to become general.

*Dr. Meyer.*—The question put by Dr. Motais, whether we must attribute the origin of fatal accidents to the phlegmone of the orbit or to the surgical interference, can only resolve itself, it seems to me, in the establishment of statistics of panophthalmitis with orbital phlegmone. In this way the question will be cleared up, whether such cases, when left to themselves, are frequently mortal, or whether these dire results happen in a greater number in the cases in which an enucleation has been performed.

*Dr. Coppez.*—I have abandoned enucleation in panophthalmitis in consequence of having to deplore two cases of death when practicing it. Moreover, in these cases the operation is fraught with extreme difficulties. I much prefer exenteration, which quiets the panophthalmitic pains as much, and even more so, than enucleation.

*Dr. Galezowski.*—I have not in a single instance brought myself to enucleate an eye on account of panophthalmitis. How must one feel in proposing in private practice to remove an eye which was originally operated upon by the extraction

of cataract, and how, if death ensues from this operation, as has happened to Dr. Pagenstecher?

*Dr. Martin* (Bordeaux).—It would be well to know how many of the fatal cases of enucleation in panophthalmitis belong to the pre-antiseptic period, and how many have happened since the introduction of these new methods of wound treatment.

*Dr. Bravais*.—Dr. Gayet (Lyons) has always enucleated eyes attacked by panophthalmitis and successfully so, even before the antiseptic period.

*Dr. Panas*.—In this whole question, which is yet *sub judice* and which I consider far from being solved, the principle point is to exactly find the indications and counter-indications of the operation. Certain it is, that death after enucleation in panophthalmitis must have certain special causes, since not all of these patients succumb, and since these accidents on the whole are rare. The eye constitutes a focus of infection which is very apt to throw morbid germs into the remainder of the body by way of the lymphatic sheaths of the optic nerve. If the general infection does not supervene in all of these cases, it is because a patient with a sound constitution has been able to react and to destroy the morbid germ as soon as it appeared. If on the other hand the patient is sick, as in my case in which he was albuminuric, he forms, so to speak, a field of less resistance and is very apt to allow the infectious disease to propagate; in such cases these accidents will be observed.

Is it therefore necessary, in these cases even, to abandon enucleation and to return to the incision of the eyeball?

The incision of the eyeball is of no value, since the intra-ocular pus is solid and does not come out; even evisceration is valueless, since, as has been said, this operation is followed by the most violent pains. Enucleation, therefore, remains the only remedy in order to quiet the pains and, in performing it, we act according to the general surgical rules, which teach us to remove totally every focus of local infection as soon as it is possible.

## ACADEMY OF MEDICINE.

ON THE USEFULNESS OF AND PRINCIPAL INDICATIONS FOR  
INJECTIONS OF ANTIPYRINE IN OPHTHALMOLOGY.

BY DR. GRANDCLÉMENT, OF LYONS.

For three months I have studied the indications and the best mode of administration of antipyrin in the treatment of eye affections. From the first I have found that injections of antipyrine at the temple yielded quicker and more certain results than the administration of this drug by the mouth. In exceptional cases only I combine the two modes of absorption. In the second place, when the injections are useful and efficacious, the improvement appears right after the first injection; and then four or five injections suffice usually to get the full effect of the drug. I have made in this way more than 300 injections, consisting of 25 centigrammes of antipyrine in 10 drops of distilled water with a half a centigramme of muriate of cocaine. This was never followed by the formation of an abscess, yet, the region of the injection becomes always slightly swollen and is painful to pressure. This swelling lasts from six to eight days and often extends in the shape of an œdema down to the lower eyelid.

I think, that when the injections are successful the greater part of their efficacy is probably due to this kind of subcutaneous revulsion, combined with analgesia of the skin at that place.

The indications of these injections in eye diseases, I formulate in the following general proposition:

The injections of antipyrine at the temple are successful:

1. Quickly and almost always against ocular and especially peri-orbital pain.
2. Often also, but less promptly and certainly, against spasm.
3. Finally, they modify favorably the majority of inflammatory processes of the eye-ball, especially when they are accom-

panied by ciliary pain. This favorable action upon the progress of the inflammation is the more evident, the more pronounced is the pain.

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## CORRESPONDENCE.

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MACON, GA.

EDITOR AMERICAN JOURNAL OF OPHTHALMOLOGY.—Sir, referring to Dr. C. W. Hobby's article on "an operation for pterygium" in the April number of your journal, I have to say: It is the operation I nearly always make for pterygium, having learned it from my preceptor, Dr. A. W. Calhoun, of Atlanta, Ga. Whether it was originated by him or not I am not certain, but my impression is it was. I have employed it for about five years. Very respectfully

R. O. COTTER.

## OBITUARY.

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### JOSEPH AUB.

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The death of Dr. Aub, of Cincinnati, was sudden and unexpected, even to those who knew that he had not enjoyed vigorous health for a few years past. He continued in active practice until about three months ago, when he went South in hopes that the change would benefit him. But he returned without relief, and albuminuria rapidly developed. This with the chronic heart trouble which remained after an attack of acute rheumatism a few years ago, rapidly carried him off. His career was short but remarkably successful, and he lived to the age of 43, just as he was realizing the results of his years of professional work. He was born and educated in Cincinnati and graduated in 1866 at the medical college of Ohio. He went abroad and studied ophthalmology in Vienna, London and Berlin, and returned to New York and for some time was an assistant to Dr. Knapp of that city. He began the practice of his speciality in 1872, and from the first his professional career may be said to have been a success. He had a large and influential circle of friends who gave him their confidence at once. His excellent opportunities for study at home and abroad gave him an advantage which few men have. His practice grew rapidly, and in his devotion to it he neglected to pay that attention to his own health which it demanded. He was a member of the staff of the Cincinnati Hospital from 1871 to the time of his death, and for five years was professor of ophthalmology in the Cincinnati Medical College. He was an occasional contributor to this and other medical journals, and his papers were always clearly written and

contained the results of practical observation which were of value to others. The profession has lost an earnest worker and a devoted student in the death of Dr. Aub.

S. C. AYRES.

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EDWARD GREELY LORING, M.D.

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Edward Greely Loring, M.D., died suddenly in the street on Monday afternoon, April 23, in the fiftieth year of his age. It was not known to his friends, and probably not to himself, that his health had undergone any deterioration, and on the day of his death he attended to his practice as usual. It is understood that his sudden death was owing to heart disease.

Dr. Loring took his medical degree from the Medical department of Harvard University, in 1864. He soon came to New York, and for a time he was associated in practice with the late Dr. Agnew, whose death preceded his own by only five days. At the time of his death, and for many years before, Dr. Loring was one of the surgeons of the New York Eye and Ear Infirmary, and he had achieved distinction as an ophthalmologist. Indeed, in the field of physiological optics, and especially in that of ophthalmoscopy his pre-eminence was everywhere acknowledged. His "Text-Book of Ophthalmoscopy," the first volume of which was published in 1886, took rank at once as the standard American work on that subject. Not only was Dr. Loring's ability as an ophthalmologist generally recognized, but his qualities of heart endeared him to his patients and to all who knew him. As the shock felt on the announcement of his sudden death passes off, it will be succeeded by an abiding sense of the loss that the profession and the community have sustained.—*N. Y. Med. Journal.*